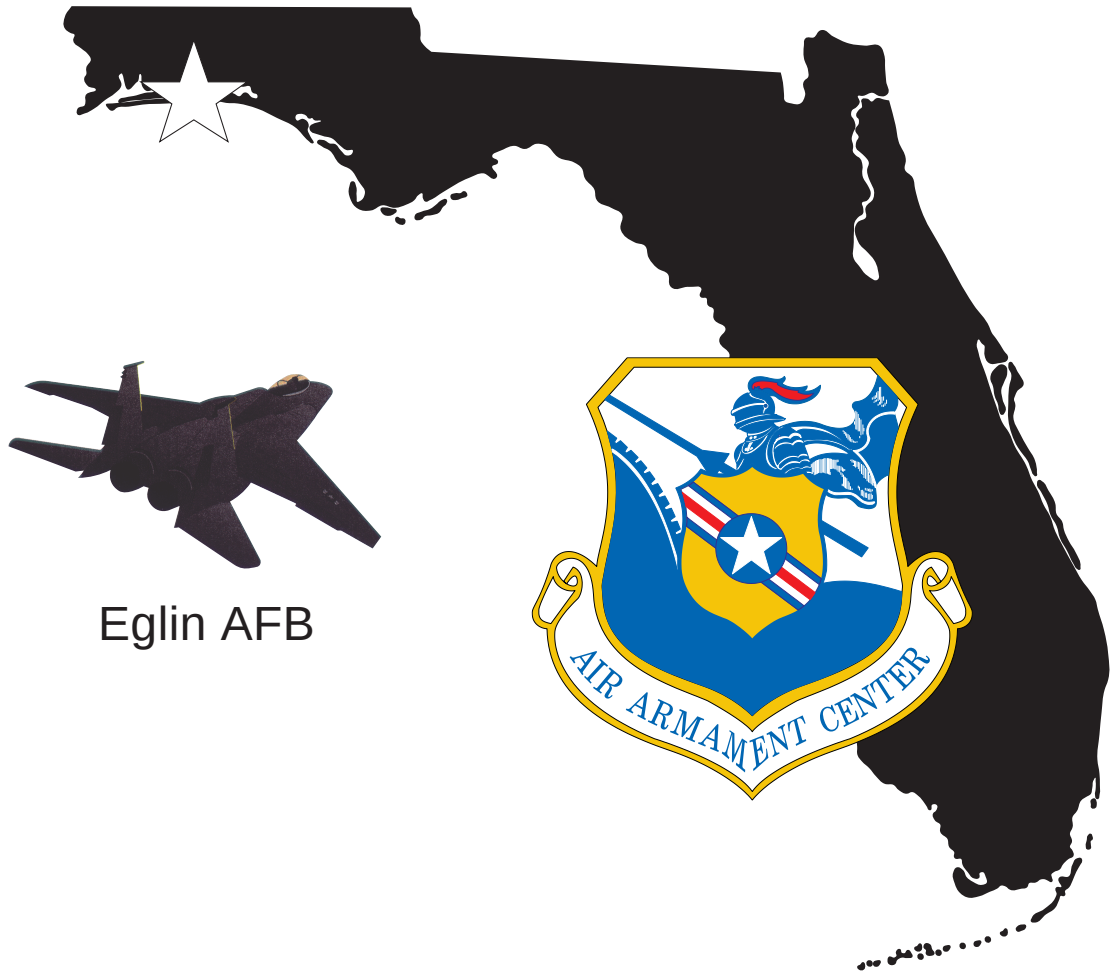
Installation Restoration Program

Final Statement of Basis for Site LF-08, Receiver Landfill, Eglin Air Force Base



Eglin AFB

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Final Statement of Basis for Site LF-08 Receiver Area Landfill, Eglin Air Force Base

Objective

This Statement of Basis (SB) explains the proposed remedy for landfill (LF) site LF-08, designated in the United States Environmental Protection Agency (USEPA) Resource Conservation and Recovery Act (RCRA) Hazardous and Solid Waste Act (HSWA) Permit (the Permit) for Eglin Air Force Base (AFB) as Solid Waste Management Unit (SWMU) D7. The site is located on Eglin AFB managed under the Air Force Installation Restoration Program (IRP). A RCRA Corrective Measure Study (CMS), completed in November 1998, concluded that the operations formerly conducted at this site have had no significant effect on human health and the environment. Since future land use is not expected to deviate substantially from current land use, the CMS recommended a remedy of No Further Investigation Required with Land Use Controls (LUCs). The LUCs restrict future development of the site and restrict potable use of the groundwater beneath the site. This remedy will protect human health and the environment. No other remedies were evaluated. To implement the LUCs, a Land Use Controls Implementation Plan (LUCIP) will be developed by the Air Force for LF-08. The LUCIP will be approved by USEPA and will also serve as the Corrective Measures Implementation Plan (CMIP), as required to implement a remedy, pursuant to RCRA.

The public is invited to comment on this proposed remedy for LF-08 or any other remedial alternatives, including those not previously identified. This SB includes information on how the public may participate in this decision making process.

Introduction

LF-08 was previously identified as SWMU D7 in the Permit for Eglin AFB, issued by USEPA Region IV, effective September 16, 1986, and revised April 26, 1998. This SWMU is regulated under the Permit, which requires that SWMUs be investigated, remediated, and closed. The Permit requires that an SB be prepared which identifies the proposed remedy for the landfill, explains the rationale for the remedy selection, and allows for a Public Comment Period of 45 days.

USEPA Region IV will finalize this decision by modifying the Permit to incorporate the corrective measure, subsequent to Florida Department of Environmental Protection (FDEP) review of and concurrence with this SB, and the public comment period has ended. All information submitted during this time frame will be reviewed and considered before final approval. Eglin AFB, USEPA, and FDEP have entered into a Memorandum of Agreement (MOA) which outlines the LUCs as described in the USEPA Region IV Memorandum, Assuring Land Use Controls at Federal Facilities, dated April 21, 1998. This MOA serves as

the LUC Assurance Plan (LUCAP). A LUCIP will be developed by the Air Force IRP and will serve as the CMIP. The LUCIP will be implemented in accordance with USEPA Policy.

This SB provides a summary of past investigative work performed at LF-08; however, this SB should not be considered a substitute for the actual technical documents. In addition to the information provided in this SB, more detailed information is provided in the *RCRA Corrective Measures Study (Group II) LF-08: Receiver Area Landfill*, O'Brien & Gere Engineers, Inc., (November 1998). This report and other documents related to LF-08 can be found in the Eglin AFB Administrative Record, which is available for public review (see the last section of this SB for locations).

Background/History of LF-08

The Receiver Area Landfill (LF-08) is located approximately one-tenth of a mile east of Perimeter Road on a paved access road which leads to a transmitter receiver station (Figure 1). The access road intersects the Perimeter Road on the northeast side of the Eglin Main Base north/south runway. A ravine borders the landfill on the south. At the base of the ravine is a beaver pond that is approximately 6 acres in area. The pond drains into an unnamed creek at a beaver dam located approximately 200 feet east of the landfill. The creek flows into Toms Bayou which is connected to Boggy Bayou then Choctawhatchee Bay to the east. The landfill is approximately 6 acres in size and is fenced along the northern boundary, with access to the east and west limited by steep topography, and access from the south limited by the ponded water (Figure 2).

The IRP Phase 1 Records Search identified the site as a potential source of environmental contamination, due to past waste disposal practices. Eglin AFB subsequently identified the site as SWMU–7 in its RCRA permit. LF-08 was included in the following multi-site investigations:

- Phase II Stage 2 Investigation conducted from 1987 to 1988
- Preliminary Assessment conducted in 1991
- Basewide Herbicide Orange Investigation conducted in 1992

An RFI was conducted at the site during 1994-1995 and was submitted to FDEP and USEPA, Region IV for review in July of 1995. Based on the results and conclusions of the RFI, a CMS was recommended. A draft CMS was submitted in November of 1996. An additional round of groundwater sampling was conducted during 1996. Both a Human Health Risk Assessment (HHRA) and an Ecological Risk Assessment (ERA) were also completed at LF-08 in 1996.

In May 1997, an investigation was completed to evaluate the potential for sediment and surface water contamination from three 55-gallon drums that were found in the beaver pond. Inspection and analytical results indicated that the drums were empty and have not adversely impacted the surface water or sediment of the pond.

In October 1997, a Confirmatory Groundwater Sampling Program was executed. The results of the confirmatory sampling program indicated that COPCs in groundwater were below Eglin AFB's Tier I Screening Levels and/or base specific Tier II background levels. Due to

the lack of contaminants identified during the additional round of groundwater sampling at the site, No Further Investigative Action for groundwater has been approved.

An Interim Corrective Measure (ICM) was conducted during December 1997 and February 1998 consisting of the removal of an asphalt drive, backfilling of the site with soil and recontouring and sodding of the site to prevent future erosion. The restoration of eroded areas in the existing cover at the landfill and posting of warning signs restricting access to the pond were also accomplished during the ICM.

In 1998 a re-evaluation of analytical results, from sediment samples collected during the 1995 RFI, was completed. It was determined that sediment contaminants are not emanating from the former landfill. The sediment issue was referred to the Environmental Compliance Division for management under Eglin's Storm Water Management Program. A No Further Investigative Action recommendation was made on sediment at LF-08, under the IRP.

The following is a list of the principal historical documents for LF-08, which are available for public review at the locations provided in the Public Participation Plan of this SB:

- O'Brien & Gere Engineers, Inc., *RCRA Corrective Measures Study (Group II) LF-08 Receiver Area Landfill*, November 1998.
- BEM, Installation Restoration Program Interim Corrective Measures Work Plan for Nine Group II Site (Revision 1)(Volumes 1-7), July 1997.
- BEM, LF-08 Drum Investigation, June 20, 1997.
- O'Brien & Gere Engineers, Inc., Installation Restoration Program RCRA Facility Investigation (Group II) (Revision 0) (Volumes 1-16), September 1996.
- O'Brien & Gere Engineers, Inc., *Installation Restoration Program Ecological Risk Assessments (Group II) (Revision 1) (Volumes 1-15)*, October 1997.
- O'Brien & Gere Engineers, Inc., *Installation Restoration Program Human Health Risk Assessments (Group II) (Revision 1) (Volumes 1-15),* October 1997.
- Water and Air Research, Inc., and CH2M HILL Southeast, Inc. *Final Report of 1987-1988 Monitoring at Eglin Air Force Base, Florida. Site D-3, D-7, and D-26*, March 1990.
- Water and Air Research, Inc. *Installation Restoration Program Phase II – Field Evaluation, Eglin Air Force Base, Florida*, 1984.

LF-08 was active for approximately ten years until the late 1970s. A variety of wastes were reportedly sent to LF-08, including paint shop residues, solvents, waste oils, pesticides, pesticide drums, septic tank residue, and drums of fire fighting foam. In addition, it is reported that ten to twelve dump truck loads of polychlorinated biphenyl (PCB) contaminated transformers, capacitors, and electrical components were reported to have been disposed at LF-08. The landfill was reportedly closed by placing several feet of sandy soil over exposed debris.

Following closure, the landfill was used for temporary surface storage of Herbicide Orange and JP-4 contaminated soils. During the RFI, drums of investigation-derived waste (IDW) soil from several RFI site were temporarily stored at LF-08. IDW soil was stored in closed

drums that were regularly inspected for leakage. Following characterization, appropriate disposal of the IDW was arranged. While inactive as a landfill, the site is currently used for the temporary storage of petroleum impacted soils. These soils are stored on curbed concrete pads.

Depth of fill ranges from 3 to 35 feet, based on topography and depth to ground water. The east and west sides of the landfill are undeveloped and covered with dense vegetation. Shallow ground water is present at depths ranging from approximately 1 foot below ground surface (bgs) near the pond to approximately 50 feet bgs at the top of the ravine. Shallow ground water flow is southeast toward the pond, under an average hydraulic gradient of 0.004. The hydraulic conductivity of the surficial aquifer at the site was estimated to range between 23 and 38 feet per day.

Proposed Remedy

The CMS recommended No Further Investigation Required with LUCs for LF-08. No other alternatives were evaluated. The results from the BRA indicate that the operations formerly conducted at this site have had no significant effect on human health and the environment. Future land use is not expected to deviate substantially from current land use. Should a change in current land use be required, it will be handled in accordance with the LUCAP and the LUCIP.

Due to the random nature in which landfills receive refuse, it is difficult to fully characterize the subsurface at the site; therefore, current and future use of the property will be limited and no residential development of the property will be allowed without the proper engineering controls. Depending on the location, nature, and intensity of potential future land use activities, the Air Force will conduct additional site investigation and assessment activities to determine the proper engineering controls if existing information is not adequate. In addition, due to potential impacts to the groundwater from the landfill, LUCs will be implemented within the boundaries of LF-08 to assure that the groundwater beneath the landfill is not used for potable sources. The following sections summarize the CMS findings supporting the proposed remedy and outline the proposed LUCs and their implementation.

Nature of Contaminants

In 1995, an RFI was completed at LF-08 by OBG. (OBG, 1996). As presented in the RFI report, soil, ground water, surface water, and sediment samples were collected and analyzed for total petroleum hydrocarbons, inorganics, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides and PCBs. The concentrations of the detected constituents in each medium were compared to screening values. The detected constituents that were above screening values were then compared to background levels. If a screening value did not exist for a given constituent, then the concentrations of the detected constituent were also compared to a background level. Volume 1 of the RFI report presents a detailed discussion of the development and use of the screening values and background levels.

Based on comparisons to screening values and background levels, COPCs were identified. COPCs were defined as constituents detected at concentrations exceeding both screening

values and site-specific background levels. Base-wide background levels were used in the few instances where site-specific background levels did not exist. If only a screening value or only a background level existed and the detected concentration of the constituent exceeded that value, then that constituent was considered a COPC. Based on the results of the RFI, the following constituents were considered COPCs in various media at LF-08.

- **Surface soil:** Arsenic, calcium, chromium, magnesium, potassium, sodium, benzo(a)anthracene, benzo(a)pyrene, benzo(b)flouranthene, chlordane, dieldrin, and total petroleum hydrocarbons (TPH)
- **Surface water:** calcium, magnesium, and manganese
- **Sediment:** aluminum, chromium, iron, lead, silver, zinc, 1,1-dichloroethane, vinyl chloride, di-n-butyl phthalate, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, TPH, and cyanide
- **Ground water:** aluminum, calcium, chromium, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, thallium, and vanadium

The identified inorganic COPCs occurred in various areas of the site, with no apparent correlation between constituents, media, and extent of contamination. Vinyl chloride appeared to be limited to site sediments in the area of SE-05, with no apparent cross-media contamination. Benzo(a)anthracene, benzo(a)pyrene, and benzo(b)flouranthene, appeared to be limited to surface soil east of the asphalt road that bisects the landfill, with no apparent cross-media contamination. Similarly, di-n-butyl phthalate, identified as a COPC at SE-05, appeared to be an isolated contaminant in site sediments.

Pesticides were identified in each of the four media. The source of these contaminates could not be identified, but could be related to past pesticide use practices (based on widespread presence throughout the base).

Human Health Risk Assessment and Ecological Risk Assessment

The HHRA and ERA were completed at LF-08 in 1996. The assessments utilized analytical data from the 1995 RFI. The following constituents were identified as concerns to be addressed in the CMS for LF-08:

- **Surface soil:** None
- **Surface water:** None
- **Sediment:** aluminum, vinyl chloride, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, and cyanide
- **Ground water**: Aluminum and iron

In October 1997, a Confirmatory Groundwater Sampling Program was executed. The results of the confirmatory sampling program indicated that COPCs in groundwater were below Eglin AFB's Tier I Screening Levels and / or base specific Tier II background levels. Due to the lack of contaminants identified during the additional round of groundwater sampling at the site, No Further Investigative Action for groundwater has been approved.

In 1998, analytical results from sediment samples collected during the RFI were evaluated. The distribution and concentrations of COPCs in sediment indicate that there were other sources or additional sources for most of the COPCs detected. It was determined that sediment contaminants are not emanating from the former landfill. The sediment issue was

referred to the Environmental Compliance Division for management under Eglin's Storm Water Management Program. The most recent data indicate that the operations formerly conducted at this site have had no significant effect on human health and the environment. A No Further Investigative Action recommendation was made on sediment at LF-08.

Interim Corrective Measure

An ICM was conducted during December 1997 and February 1998. ICM activities included: the collection and disposal of surface debris; excavation and off-site disposal of an asphalt road; placement, compaction and grading of fill material; and placement of sod (22,000 square feet). These actions restored the effects of erosion and retard future erosion of landfill cover. Two warning signs were placed at the southern perimeter of the landfill. The warnings are to avoid contact with pond sediment.

Proposed Remedy Implementation

Based on the results of the CMS and the projected future use of LF-08, there are no unacceptable current or future risks to human health and the environment related to the concentration of chemicals found to be present at the site. However, due to the nature of landfill and the potential impact to groundwater, this site has been recommended for No Further Investigation Required with land use controls. The landfill will also be monitored for erosion and, if erosion occurs, a soil cover will be placed over the eroded areas. The institutional controls will consist of the following LUCs:

- The property will be restricted from residential development without proper engineering controls. Depending on the location, nature, and intensity of potential future land use activities, the Air Force will conduct additional site investigation and assessment activities to determine the proper engineering controls if existing information is not adequate.
- Fishing in the pond will be restricted to catch and release only and signs indicating such prohibitions will be posted.
- Future development will be restricted from using the shallow aquifer under LF-08 as a source of potable drinking water.
- Maintenance of existing utilities or replacement of existing utilities in the same location is allowed.
- The property will be inspected at least quarterly to ensure that unauthorized use of the property does not occur and that status of the property is unchanged. The Air Force will submit an annual site status report to both the USEPA and FDEP, in accordance with the mutually approved LUCAP.
- The Air Force will notify USEPA and FDEP upon the discovery of any unauthorized change in land use.
- For requests for major land use changes, written requests will be submitted to both the USEPA and FDEP, in accordance with the mutually approved LUCAP. Requests will be submitted as soon as a major land use change is anticipated, to allow sufficient time for regulatory review and amendments to remedy selection decision documents.

A LUCIP will be developed to document the implementation of these LUCs. In addition, the LUCIP will designate an Environmental Management Restoration (EMR) representative to be responsible for compliance with the LUCs, and the LUCIP will be referenced in appropriate Eglin AFB basewide planning documents. Further, if land use changes are required, the LUCIP and the LUCAP will address how the LUCs or remedy will be changed, if necessary.

By separate MOA dated December 23, 1999, with USEPA and FDEP, Eglin AFB, on behalf of the Department of the Air Force, agreed to implement base-wide, certain periodic site inspection, condition certification and agency notification procedures designed to ensure the maintenance by Installation personnel of any site-specific LUCs deemed necessary for future protection of human health and the environment. A fundamental premise underlying execution of that agreement was that through the Air Force's substantial good-faith compliance with the procedures called for therein, reasonable assurances would be provided to USEPA and FDEP as to the permanency of those remedies which included the use of specific LUCs.

Although the terms and conditions of the MOA are not specifically incorporated or made enforceable herein by reference, it is understood and agreed by the Air Force, USEPA and FDEP that the contemplated permanence of the remedy reflected herein shall be dependent upon the Installation's substantial good faith compliance with the specific LUC maintenance commitments reflected therein. Should such compliance not occur or should the MOA be terminated, it is understood that the protectiveness of the remedy concurred on may be reconsidered and that additional measures may need to be taken to adequately ensure necessary future protection on human health and the environment.

Public Participation for LF-08

The public is encouraged to provide comments regarding the corrective action alternatives provided in this SB or any other remedial alternatives, including those not previously studied. The public can review information on the IRP at Eglin AFB and the investigations and actions taken under the Permit, including all reports and documents. The information repository and administrative record files are available at the following locations:

Eglin Air Force Base AAC/EMR 207
Second Street, Bldg. 216
Eglin AFB, FL 32542-5133

Technical Library
203 W. Eglin Blvd, Suite 300
Eglin AFB, FL 32542-5429

FDEP
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

A 45-day public comment period will be held from April 10, 2000 to May 25, 2000. Comments received will be summarized, and responses will be provided in the upcoming Responses to Comments document. The Responses to Comments document will be prepared following the close of the public comment period. The Responses to Comments will be included with the final permit modification. If requested during the Public Comment Period, USEPA will hold a public meeting to respond to any oral comments or questions regarding this action. The public will be notified of the date, time, and place of any public hearing as soon as it is scheduled.

To request a hearing or provide comments for LF-08, contact the following person in writing postmarked by May 25, 2000:

USEPA – Region IV
RCRA Programs Branch
61 Forsyth Street
Atlanta, GA 30303
Attention: Mr. Jon Johnston, Chief

To request further information, you may contact one of the following people:

Mr. Howard H. Mathews III, R.E.M.
Eglin AFB
207 N. 2nd Street, Bldg 216
Eglin AFB, FL 32542-5133
(850) 882-7791

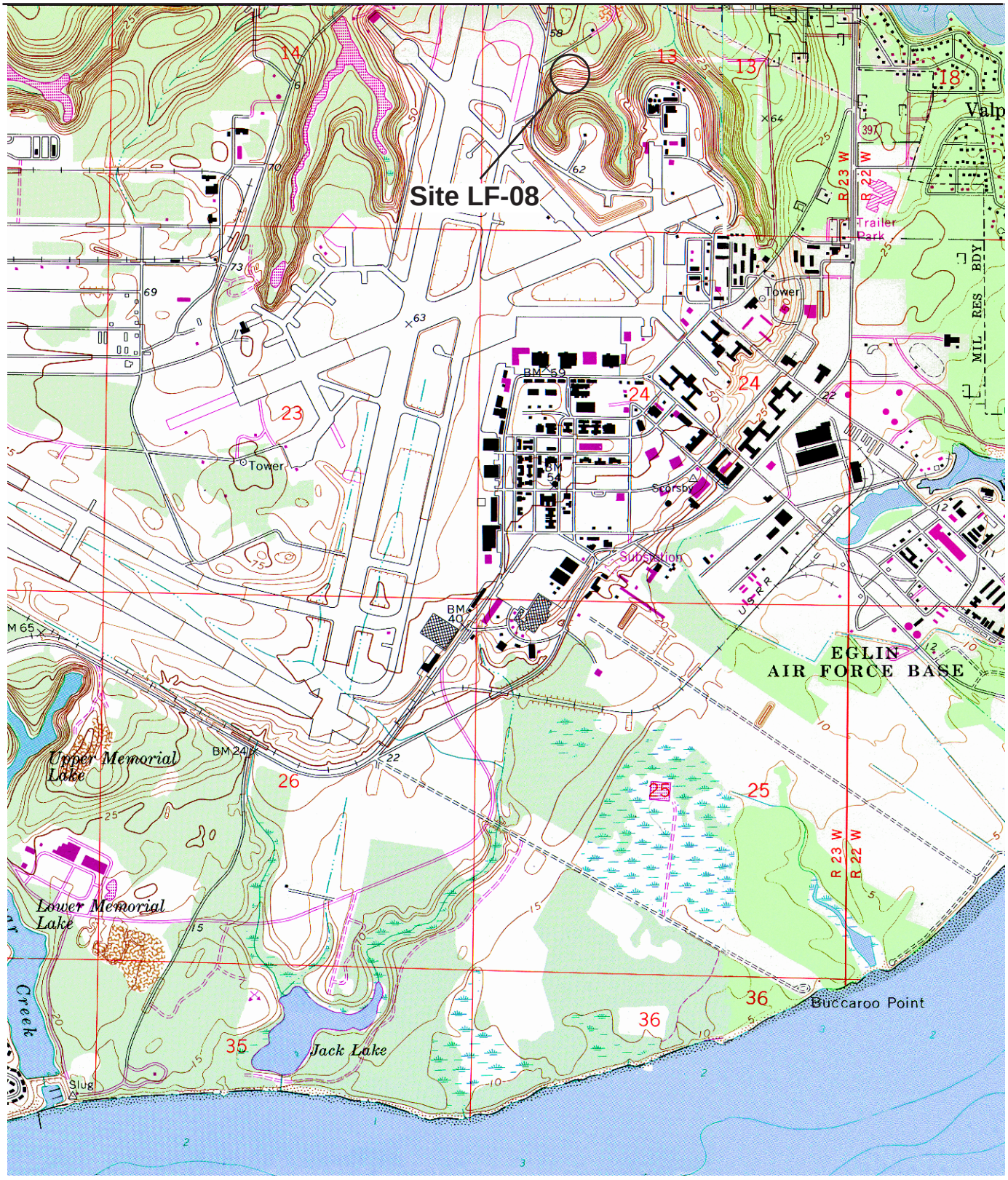
Mr. Robert H. Pope
USEPA - Region IV
Federal Facilities Branch
61 Forsyth Street
Atlanta, GA 30303
(404) 562-8506

Mr. Greg Brown, P.E.
FDEP
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400
(850) 921-6779

Important Dates to Remember

Public Comment Period begins: **April 10, 2000**

Public Comment Period ends: **May 25, 2000**



Source: USGS Quadrangles, Fort Walton Beach, FL, 1992; Destin, FL, 1976.

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1" = 2,000'

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Scale in Feet

AIR ARMAMENT CENTER

FIGURE 1
Site Location Map
Site LF-08, Eglin AFB

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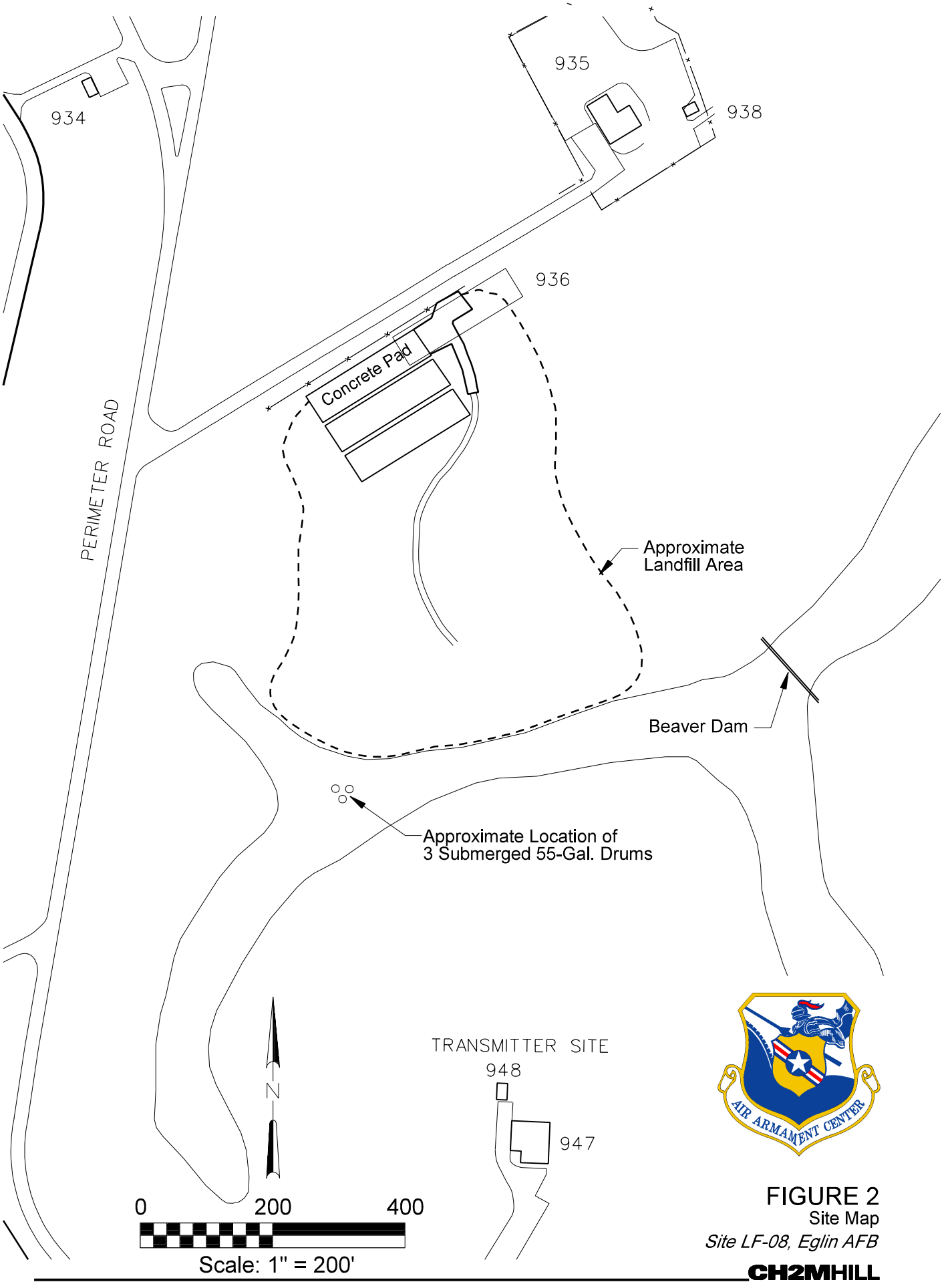

FIGURE 2
Site Map
Site LF-08, Eglin AFB

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Applicable Definitions

Aquifer: Subsurface rock or sediment in a formation that is saturated and sufficiently permeable to yield economic quantities of water to wells and springs.

Contaminants of Potential Concern (COPC): contaminants that represent an actual or potential threat to human health or the environment.

Corrective Measures Study (CMS): Study to develop and evaluate possible corrective measures.

Ecological Risk Assessment (ERA): The application of a formal framework, analytical process, or model to estimate the effects of human actions(s) on a natural resource and to interpret the significance of those effects in light of the uncertainties identified in each component of the assessment process. Such analysis includes initial hazard identification, exposure and dose-response assessments, and risk characterization

Florida Department of Environmental Protection (FDEP): Regulatory branch in Florida responsible for implementing state or federal environmental laws.

Groundwater: The supply of fresh water found beneath the Earth's surface, usually in aquifers, which supply wells and springs. Because ground water is a major source of drinking water, there is growing concern over contamination.

Hazardous and Solid Waste Amendments (HSWA) of 1984: The amendments, passed by Congress, provided additional strength to RCRA and added under its regulatory power small quantity generators. While Superfund deals with cleanup of abandoned hazardous waste sites, RCRA and HSWA regulate active hazardous waste facilities.

Human Health Risk Assessment (HHRA): Study to determine the likelihood that a given exposure or series of exposures may have damaged or will damage the health of individuals.

Hydraulic Gradient: In general, the direction of groundwater flow due to changes in the depth of the water table.

Installation Restoration Program (IRP): The Air Force program designed to identify, investigate, and cleanup contamination associated with past Air Force activities at active AF installations; government-owned, contractor-operated facilities; off-site locations where contamination may have migrated; third party sites; and sites that the AF formerly owned or used.

Land Use Control Action Plan (LUCAP): A Memorandum of Agreement (MOA) among Eglin, EPA, and FDEP designed to assure the effectiveness and reliability of the required Land Use Controls (LUCs) for as long as any LUC continues to be required in order for the remedial / corrective action to remain protective.

Land Use Control (LUC): is broadly interpreted to mean any restriction or control, arising from the need to protect human health and the environment, that limits use of and / or exposure to any portion of that property, including water resources. This term encompasses institutional controls, such as those

involving real estate interests, governmental permitting, zoning, public advisories, deed notices, and other legal restrictions. The term may also include restrictions on access, whether achieved by means of engineered barriers such as a fence or concrete pad, or by human means, such as the presence of security guards. Additionally, the term may involve both affirmative measures to achieve the desired restriction (e.g., night lighting of an area) and prohibitive directives (no drilling of drinking water wells). Considered altogether, the LUCs for a facility, in conjunction with the base master plan, will provide a blueprint for how its property should be used in order to maintain the level of protectiveness which one or more remedial/corrective actions were designed to achieve.

LUC Implementation Plan (LUCIP): A written plan, normally developed after a decision document has required one or more LUCs, for some particular area (operable unit, contaminated unit, and/or solid waste management unit). The LUCIP 1) identifies each LUC objective for that area (e.g., to restrict public access to the area for recreational use) and 2) specifies those actions required to achieve each identified objective (e.g., install/maintain a fence, post warning signs, record notice in deed records). LUCIPs specify what must be done to impose and maintain the required LUCs, and are therefore analogous to design and/or operation and maintenance plans developed for active remedies.

Monitoring: Indicates a variety of investigative activities, ranging from mere drive-by visual observations to detailed scientific sampling and testing. The nature of the particular Land Use Controls being implemented will determine the type(s) and extent of any monitoring activities provided for under this policy.

Permit: A RCRA permit, issued for the Eglin AFB, establishes the facility's operating conditions for managing hazardous waste.

Potable Water: Water that is safe for drinking and cooking.

RCRA Facility Investigation (RFI): Evaluates the nature and extent of the releases of hazardous waste.

Resource Conservation and Recovery Act (RCRA) of 1976 requires each hazardous waste treatment, storage, and disposal facility to manage hazardous waste in accordance with a permit issued by the U.S. Environmental Protection Agency (EPA) or a state agency that has a hazardous waste program approved by EPA.

Solid Waste Management Unit (SWMU): Any discernible unit (to include regulated units) at which RCRA solid waste have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste.

Statement of Basis (SB): The RCRA decision document that specifies the site remedy and establishes LUCs.

U.S. Environmental Protection Agency (EPA): The federal agency responsible for implementing environmental laws enacted by Congress.